

Interview with Eric Newman, likely 2005, discussing the Newman Money Museum exhibits on blacks and numismatics, Benjamin Franklin, inflation, and the origin of the \$ sign.

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SPEAKER: So, the topic in front of me is blacks. So, I am... wanted to pick up some of these items and talk about them.

WOMAN: Yes.

SPEAKER: The most amazing subject with respect to blacks is the token coinage which began in England in approximately 1795 when Wilber [2:52] and his group in England were endeavoring to eliminate slavery and throw their greatest possessions. They issued a series of copper tokens. Now a copper token would circulate as money because the public was always short of copper tokens or copper money put out by the Crown because there was a great feel of profit of making copper coinage. So, private people made it as well as the public and the amount of value in a particular piece was usually 40-50 percent of its circulating value. So, in England, the publication of the amount of token coinage which was being made encouraged propaganda being used on tokens in addition to a particular place or business using it for advertising. The anti-slavery movement, which incidentally has an exhibit in the New York Historical Society beginning in a few days in October 2, 2005. They decided it would be smart to put out a propaganda token for the antislavery movement. They created a token that had on the obverse "*Am I not a man and a brother?*" and in the center they had an image of a man in chains in a kneeling position asking this question. It is a pitiful, pitiful thing with both of his arms and legs chained and asking this question. On the other side of this coin; the reverse was two various types of handshakes. The idea was to have slavery cease throughout the world. So, these circulated very extensively and were copied by some of the ceramic makers of England and put on not only dishes, but on ornamental pieces for women to wear; all with this "*Am I not a brother?*" It had, "*May slavery cease throughout the world*", or some similar expression doing that. The British were successful after approximately 40-years eliminating slavery in their colonies. So, then they wondered why the United States didn't follow through with the same idea. Of course, there was turmoil about slavery in the United States in the colonial period and during independence and continually after that because this was a major economic problem to a great part of the United States.

From time to time, the United States had a great many of free slaves. Either their owners had given them freedom as a matter of decency or the owners felt that they were entitled to it after they worked for a long period and some owners left their land in the States to their slaves. So, you have two groups of blacks in the country. One is slaves and one were free-blacks. The free-blacks were subjected to a lot of propaganda. Although they

were in plantations and in a place of their own; and had very successful careers, but there was an encouragement to ship all of the free-blacks that would be willing to do that and any other blacks that would get a release from their slavery to go to Liberia in Africa and start a new country. So, in the 1830's the Liberian movement; the American colonization society developed Liberia and blacks started moving over there. This was popular for a very modest period and then deteriorated from time to time because they had developed a completely new lifestyle because they were thrown back into an obsolete situation in Africa who were struggling among the blacks themselves; and struggling with the Americans financing them; so the history of Liberia is very, very complex. The Liberian Colonization Society issued money and that helped to some extent to finance the colonization movement. However, back to the success of the British slavery token, the American anti-slavery society decided that they too would put out tokens because during the panic of 1837, money was in very short supply in the United States and so they designed a token, which they would have a person make them and sell them to the distributor, which would be the colonization society, at a discount from the one-cent each and usually it would cost maybe 60 percent of the face value. We will talk about face value in a minute. Then the colonization society would make a slight profit on distribution of these tokens and they were copper and the one that they made first was a woman, "*Am I not a woman and a sister?*" and they dated that 1838 and she was similarly chained by hands. As it so happens, her feet were not chained. She has a chain link on her ankle so that they could be chained. She also has on the back and handshake of two hands joining; being probably one that is a black person and one that is a white person, we don't quite know. I don't know what the symbol is. This says on it, "*May slavery and oppression cease throughout the world*".

WOMAN: Were these the same size, Eric, the English one and the American one?

SPEAKER: Yes, approximately the same size.

WOMAN: Okay.

SPEAKER: Now I hers, the female slavery token, the back has, I don't know... "One-cent United States of America", but there is a spelling error in the "n" being backwards retrograde or mirror image "n" on the female coin so never-the-less the government was after the slavery society to stop the circulation of these coins because the government felt that they were illegal. They started to go after the government. In the mean time, the anti-slavery society had such success with the female, apparently being the first one that they named, that they ordered a male token of similar style and the government apparently was ready to cease these. In any event, there exist only three of the male tokens that remain because there were so very few that were struck and the female is very common and there would be perhaps close to a thousand of those known today. So, this is an idea in the newspaper comments with respect to them. There were some vicious anti-black propaganda in the newspaper, but the most interesting is if you were pro slavery and you received one of these in change, you could always spend it quickly so that it wouldn't bother you. Otherwise, but that would still get the propaganda in the hands of everybody who was using money. This is a fascinating type of coinage because

it was propaganda coinage and it was very affective and charming. As everybody knows, the success of the anti-slavery movement was very slow, and while some of the northern states eliminated slavery long before the Civil War it was the cause of the Civil War and the organization of the confederacy.

WOMAN: This is fascinating.

SPEAKER: Oh, it is. Now, there was other propaganda. I have in my hand a six and a quarter paper money script note issued by the city of Schenectady, New York, November 5, 1814. It has propaganda on it also, it has "*May free men be free men and all men be free*". This propaganda was put on the sides, top and bottom of the note.

WOMAN: So, this was issued by a city government?

SPEAKER: This is issued by a city government. It was the type of note that was issued immediately following the depression after the War of 1812, which wrecked the American economy for quite a period. It also has a motto on it, "*No Slavery*". This is a very important piece of how some of the people felt in the North and were very anxious to have slavery disappear as soon as possible. And this is of course, long before the 1838, "*Am I not a woman and a sister*". In 1864, the piece of paper money which is called, Abolition Exchange, it is for two-cents. It says for five of these Abolition Exchange notes, I'll pay ten-cents as long as Father Abraham is not stoned. This is issued in Cutstown, Pennsylvania, April 28, 1864.

WOMAN: What does that mean, "As long as..."

SPEAKER: It was a two-cent note that was put out during the Civil War period in the North; again used for propaganda.

WOMAN: But what does... I don't understand where it says, "As long as..."

SPEAKER: Well, that's just a... Father Abraham is just a whole set-up for propaganda.

WOMAN: Oh. I didn't know that. Okay.

SPEAKER: Yeah, and it says "Greenback Manufacturing" which means paper money that has no particular backing.

WOMAN: Okay.

SPEAKER: Now, I'm going to skip around from one thing to another just so you know.

WOMAN: Oh, that's fine.

SPEAKER: In front of me now is some commemorative half dollars put out by the United States of America. This is the... two different types. One is the ... just a minute.

This got dirty. Goodness. I'll get that out of there. This is the commemorative 50-cent piece put out in honor of George Washington Carver, who was the educated genius who was born of a slave family and was educated because they recognized his ability and he became an outstanding botanist with many of the ideas which are talked about today and still trying to carry out his theories and some of his methods of improving agriculture in general. We will have that on display. This has on it, and this is fascinating from the again propaganda point of view, "Freedom and opportunity for all Americans". This is again, wonderful...

WOMAN: When was this issued?

SPEAKER: I'm trying to see. I have to clean them.

WOMAN: It doesn't say on the little card?

SPEAKER: 1954.

WOMAN: 1954. Oh. Ronald vs. [22:44] Education, right?

SPEAKER: Yes, a little.

WOMAN: Interesting; very interesting.

SPEAKER: A birth place memorial for him was also put out from 1946-1951 from the slave cabin to a hall of fame. A black artist by the name of Scott Hathaway did the commemorative piece. These were official United States 50-cent pieces, but of course they did not circulate because they were sold at a slight premium and were souvenirs rather than...

WOMAN: So, people just started grabbing them up?

SPEAKER: Yes, people bought them and held them as keepsakes. I had it here for an exhibit and then...

In 1860, a half-size coin was put out as a propaganda coin that would be accepted in circulation because it has the same amount of copper as a half-cent, but by 1860, half-cents were no longer being minted by the United States. They stopped in 1857. This says on it, "Millions for freedom not one-cent for slavery". So, this was interesting piece of propaganda because the motto talked all over America for the first half the 19th century was "Millions for defense not one-cent for..." ...Just a minute....not one cent for something? Just a minute.... Well, all right I'll come to that in a little bit.

WOMAN: Sounds very familiar.

SPEAKER: It is connected with... paying off _____ [26:10] or somebody of that sort.

WOMAN: It sounds so familiar.

SPEAKER: I'll have it in a minute. Tribute.

WOMAN: Yes.

SPEAKER: Not one cent for TRIBUTE.

WOMAN: Okay.

SPEAKER: So, that was the payoff. And another item, which ... that other item which I mentioned earlier was put out by the Republican party in 1860.

WOMAN: Okay.

SPEAKER: Now, to go to another part of the world, there was a one-penny token put in circulation in Barbados. This was so interesting because it was "Freedom without slavery". That is the motto that is on there which was issued in the late eighteenth century by Moses Toronto, who was a -Jewish [27:25] person who was a Rum dealer living in Barbados, and he puts a chunk on the coinage and puts the initials "MT" for Moses Toronto, but of course he's making a comic wise crack because he's saying that the chunk is empty. This showed the propaganda for freedom. Pardon me, the chunk that I mentioned with "MT" on one side, there is a bottle for some sort of liquor on the other side and it also has "MT". These are necessity money that contains some of the propaganda showing that there was a tremendous anti-slavery movement and we liked to show it on coinage.

WOMAN: Something like the Barbados token...

SPEAKER: What?

WOMAN: Something like the Barbados token... do you have any idea how many of those are still around? I'm just curious. There are some?

SPEAKER: Hardly scarce. It's routine and available. Now, let's see here what more...

WOMAN: Old friends.

SPEAKER: These are that I just pulled out, are 1833 one-cent tokens issued by Liberia. They point out Founded in 1816 and they are put out by the American Colonization Society and showing a part of it developing Africa. These were made here in the United States and sent over to Liberia for the purpose.

WOMAN: What are they made out of?

SPEAKER: These are made of copper.

WOMAN: Okay.

SPEAKER: Copper coins; one-cent piece. Now...

WOMAN: There's a stack of paper money over here.

SPEAKER: Yeah, I will take that now. Other matters relating to blacks on money became popular because the South in issuing paper money always wanted to show the dignity of the black workman whether he was a slave or not. The earliest that we've notice in South Carolina, a thirty-dollar bill was issued February 1777, just after Independence and it shows an old man; it doesn't show whether he's a slave or not, but it says in Latin, "*Servitus Omnis Misteri*" meaning "*Servitude is always miserable*". This indicated in all probability the servitude by the Americans to the English is miserable and their words was propaganda and didn't relate to blacks. But curiously, which had enormous quantities of slaves, it they would have thought that it was indicating that blacks were causing; miserable situation meaning blacks and slaves, they probably wouldn't issue it. So, it's very curious that they didn't think of that. They were only thinking of themselves and not the fact that the blacks... that this could be used as black propaganda.

After the United States was independent under the Constitution, the federal government was no longer able to be trusted to issue paper money. So, no federal paper money was issued from the afore mentioned Constitution until 1861 except the War of 1812 which had certain moderate types of script that the federal government did issue. However, the state banks were able to issue paper money and they used every form of art in presenting something attractive to be circulated. There were thousands of banks organized between the 1792 and 1860, and these have enormous quantities illustrated in ornamentation on the paper money. They show the blacks handling cattle. They show the blacks picking cotton. They show the blacks chopping wood; they show them raising children, they show them hauling trucks with all sorts of merchandise. They show them picking cotton with the master looking over on a horse; watching them work. There is nothing really... nothing really... bad or subject to criticism in all of this illustrated material because it shows them dressed decently; hair combed decently and then doing normal working activities. This is a very important way of the South trying to make the black dignified.

When the Confederate States of America broke off from the United States in 1861, the confederate states put out their own money. Some of their money has pictures of blacks doing carving and what have you. So, they were putting out with decorations just the same way as the state banks had done it. I'm trying to read this.... 18....

WOMAN: Are these the denominations in the corner here? Would that have been 100 dollars?

SPEAKER: That is the hundred dollar note that has on the Confederate States of America. It was issued August 26, 1862 and circulated normally while in the confederacy; struggled and maintained its economic stability and because they were

losing the war inflation took over and all of these became worthless at the end of the war. They were obtainable two years after the end of the hostilities and a treaty of peace between the confederacy and the United States of America. Of course, there was no treaty in peace. It was surrender. So, this gave rise to the expression that "The South will rise again" and the confederate money will rise again.

Now the other relationship to the blacks with money is the signature of a number of black politicians was often on the United States money and the reason for this is the same...

[Phone Ringing]

SPEAKER: Excuse me. You better turn it off incase this is long. In case it is short...

WOMAN: We've got 15-hours on there so we're good.

[Telephone Conversation was not typed.]

SPEAKER: Where were we?

WOMAN: We were talking about the signatures of black politicians.

SPEAKER: The money was signed by the register of the Treasury. The Treasurer of the United States during the time the United States was issuing money and still now we've made an adjustment; it is now signed by the Treasurer of the United States and the Secretary of the Treasurer of the United States.

WOMAN: Yeah.

SPEAKER: The Treasurer of the United States and formerly the register, were political positions and still are. The Treasurer of the United States doesn't do... has virtually no power and is a political position....They have both women and men who have had financial titled positions and have been on paper money. I thought that this group of things would make a nice display in the museum and would be very, very important.

SPEAKER: All right, that is so much for blacks. What other topics do you want me to discuss?

WOMAN: Evelyn told me that we were going to take them one at a time.

SPEAKER: Yeah, well, let's talk about...

WOMAN: Do you have any kind of... and I don't know if there is any sort of an overview to the subject, it ranges so far field...

SPEAKER: Well, I'll give you an overview.

WOMAN: Okay, good.

SPEAKER: This is a museum in order to give the public an overview of money because money is in our life at all times in everyone's life at all times; in every country's life and the money only circulates between people by virtue of confidence of the money itself. The confidence that you can do labor and be paid in money and use that money to buy whatever you choose to buy. The public is very interested in money because it is representative of a form of value and whether that value is of a thing or of someone's work or a loan for one person to lend to another so that the other person can use it and pay interest on it, these are all the faces of money that interest the public. In making money, and I mean by manufacturing or minting money or printing money, a tremendous effort goes into making it beautiful; making it recognizable immediately and making it acceptable and convenient to carry around. Money requires a study of politics, economics, geography, metal, paper, any counterfeiting devices, content of either metal or paper that doesn't get too dirty and will not wear out too quickly and will have attraction by virtue of artistic types, and recognizable in the dark and so... these are all of the interesting phases that one is faced with in the use of money. That is why it is so interesting because it has portraiture on it; it has design of manufacturing of people of animals, beautiful scenery, and all of these uplifting contributions of the human being. That makes it cover practically any subject that you can name gets involved with money one way or another. People are very attracted to the stories relating to it. Money, naturally has its difficulties from time to time because of the governments that issue it can't pay it or the governments over spend or the government collapses or you have earthquakes, floods, revolutions and what have you. Money plays a part of all of that. That is why we can reach the public with an interesting exhibit of the different phases, manufacturing and uses of money.

WOMAN: It sort of covers most of what you would think of as "specialty areas". There's sociology; there's the whole economic part of it and all that sort of thing, but there are all these other fields that are involved in it.

SPEAKER: Oh sure. The manufacture of money by the minting process is very complicated and has been improving over a couple of thousand years and the money has to be of flat design so that it can be handled, it has to have a readed edge, as we call it, so that you can drill in from the side and steal the metal content out of it. There are all kinds of problems and we study in numismatics how these coins and how the paper money was made. Those are probably... are very interesting to everybody when they finally realize how many problems there are by making money convenient. Counterfeiting has become a gigantic problem which never has gone away. As we always say, the minute money is put out the idea of cheating by counterfeiting or stealing the metal content of a coin or even the issuer has stolen from time to time, metal from the coins by adulterating the coins and reducing the amount of specie money in the coins.

WOMAN: So that is that where the saying, "a plugged nickel"... is that where that comes from?

SPEAKER: Plugged nickel?

WOMAN: Maybe that's a colonial; regional thing. I know I heard that growing up, "not worth a plugged nickel".

SPEAKER: A plugged nickel is I can't answer that. For the moment, I'll ... let me think about that.

WOMAN: Okay.

SPEAKER: I've heard "not worth a wooden nickel".

WOMAN: Yes, I've heard that too.

SPEAKER: Plugged? You see nickels used to be used in many vending machines. There are a lot of wise cracks about a nickel, but I'll have to.... Let me study the dictionary on the word "plugged" and see what that means.

WOMAN: So, maybe a plugged nickel wasn't really an adulterated nickel, but it was just a piece of metal that was....

SPEAKER: I'll look it up and see... you see, money has, I mean when you call it, money has so many crazy expressions. It's greenback if its paper money because its United States and we've always used green on the back since 1861 and never changed. We try to retain that, but no other country in the world has done that. They've all colored them different ways, or they will not have a back on them at all and so on. I'll go in to that in much more detail; while I'm thinking of it, I have done a lot of work on the dollar sign because the dollar sign has always been a symbol in the United States for the money and people had about 15 different reasons why it was chosen; nobody really knew the facts. I've put a lot of work into determining that it was as short symbol for the peso, the plural pesos, the "s" from pesos and the two lines on it are the written "p" of peso. I have traced that all the way back to 1769 and strangely enough Bayou Manchac, which is one of the flooded areas on the Mississippi River which goes in to, which did go in to... now it is blocked up from the present at the end of Lake Ponchartraine through Iberville River. The idea of having a display is to show during the entire historic period how it is possible for the human being to have a full life, because without a full life you would sit and do the same things as the cave man but when you have an economic basis for being able to work and able to accumulate the value of your work in a piece of money and use that money when you chose to buy whatever you wanted, why it then makes an entire economic life and broadens everything you have an opportunity of doing. It used to be that a merchant or a trader would let you put on his books, seed money for growing a crop and when your crop came in, he would buy your crop from you. You didn't pay for the seed because you didn't have any money and he then would charge you substantial amount for lending you the money for the seed and then your crop would be sold and you would at least... and this was all on the books. This could be done without money. But the minute modern money, particularly paper money, began around 1670 in Sweden, private paper

money, but the governmental paper money was first created in the United States in 1690. So, in Italy and in the Mediterranean in general, the different merchants in different cities would trust each other to... when you would make a shipment of some item, whether it was wine or food or some other commodity, the delivery would be received and payment made by coin; shipped back to the person who sent it to you, but if you didn't pay the coin, it would not be delivered. This was ridiculous because it subjected the coin going back being lost at sea or being stolen or being anything. So, the different merchants around the Mediterranean started to use paper obligations because they trusted each other. If I shipped you some wine and you shipped me back some oranges or something of that sort, then it was kept on memo and paper and you balanced off by trusting each other, the merchants that did that. The merchants all did this and they charged interest for the delays in payment and they tried to run an economy that way. That was all an economy run by coinage and not an economy by paper money. That is why paper money changed all of this immensely.

WOMAN: I've never thought about that.

SPEAKER: Now what I want to talk about... let me talk about another one of our topics is inflation.

WOMAN: Okay.

SPEAKER: Inflation means technically that the value of the money that is issued by the government does not maintain its value for one reason or another. There are a number of ways in that public lose confidence in the money and that is by not accepting the money, that is one, raising the price of the item you are selling to cover the loss in the value of the money and so you have two factors that were opposing the acceptance of money. Once you start to do that, everybody else does it also because if you won't take the money then other people don't and the money ceases its value wholly or partially in the circulation. That means that the cost of everything goes up. So, if the price of corn doubles or triples or quadruples, you have an inflation to that extent by virtue of the money being of less value in buying a particular item. Now it is natural for the human being to want more wages, so there is always a request for wages. Well more wages only increase the increase in inflation and that's accepted in part of the human beings ability to get along. We have a steady inflation from people wanting more money; a steady inflation from people who are selling things to get a higher price and so in due course the money becomes worth less and less all of the time. This is what the economist try to control to what extent that they can. That is why when I used to go on the streetcar when I was a kid for three-cents round trip to downtown and today I have to pay a dollar and a half on Metro Link. So, you see the inflation in just the item of transportation.

WOMAN: Is this what we refer to as the "cost of living index"? Is that basically....

SPEAKER: The cost of living index is a representative of the change of prices and therefore the prices are changed because of a result of the money being worth less compared to the basic items that you use for the cost of living. We have shown this...

and we're going to show this in various parts of the world where the largest piece of paper money would ordinarily be say fifty-dollars or a hundred dollars and then there are whatever, if it isn't dollars it is something else, pesos, rounds, whatever; then they keep on increasing the amount of the denomination of the paper money to cover the expenditures. If it took a dollar to buy a dozen eggs at one time and now it cost twenty-dollars to buy a dozen eggs, you've had twenty times the inflation. Instead of a dollar, that would take twenty dollars. Well that means the money has to be increased to cover whatever the people are expending for items and so when you get ten thousand dollars or ten thousand **cruceros** or ten thousand pesos, or what have you, Euro, or a hundred thousand or a million and so forth, I'm demonstrating all of these high denomination pieces of money that are virtually worthless. Some of them run in to the millions on one circulatory piece of paper money. That is a demonstration of inflation. Ben Franklin's expression is that inflation is the fairest tax because it taxes people with money. This is a struggle economically that people have to evaluate money because you never know what is going to happen the day after tomorrow.

WOMAN: That is a for sure thing.

SPEAKER: I want to add to the dollar sign and I think it is very important when we talked about that previously, the English language reads from left from right. Ancient languages read from right to left. There is only one exception to reading from left to right in the English language and of course European languages as well. That is a monetary signal. So, when you say the words... or write the words \$6, you write the dollar sign first and the six second. When you read it, you read from right to left, you read "six dollars" in stead of "dollars six". Nobody realizes that they are reading backwards when they are doing that, but this is

WOMAN: You asked me that question on the phone one day and I never did figure it out.

SPEAKER: Oh, well now you do.

WOMAN: Now I know.

SPEAKER: And the reason for that is because on an invoice, you want to line up the numbers at the end and you don't want to put the symbol at the end because you try to make it clear to do that... to write.

WOMAN: That is fascinating.

SPEAKER: All right. Now, what else or how else should we go on? We should only do a couple of these because you've got to think of how, how much text you want to put. The text should be very limited but very concise and very stimulating. The idea of just putting what it is absolutely dull filed.

WOMAN: Now, I understand about your point of the story about the money. I think that is the most engaging thing in terms of getting people to learn and things. I really do. I think what we have to do is identify, you know, and putting in to context, whether it's a chronological thing or obviously the country or what. But it's really the stories that are the fascinating parts, I agree with you. It is hard to get those down in to a few words, but I also realize that 99% of the people who look at exhibit, its artifacts, and it's the visual stuff that they are really interested in. So, if you can entice them to read a little bit and learn something, then that is a good thing. It's a challenge; I understand it.

SPEAKER: It must be a mental stimulant to the person; not just looking at it.

WOMAN: Yes.

SPEAKER: This is what has made it so exciting for me all of my life, is the stories as to why. Now one of the exhibits is going to be the word "Dixie", which represents a word for the south as we have argued about for years as to where it arose. For a while, it was thought that the Mason Dixon Line was drawn between, I guess Maryland and Virginia... Maryland and Pennsylvania was the line... surveyance line and the word Dixon was converted into Dixie. There was no evidence whatever that that every occurred. The first popular use of the word "Dixie" was in 1859 when the Minstrel show... Bryant Minstrel show wrote and sang "I Wish I Was in Dixie; In Dixieland I'll Make My Stand" and so forth. This is referring to the south. In studying the money of the south, the French speaking Louisiana people who are either Canadians who have been brought down from Canada or the original French settlers of the Louisiana Territory, they also spoke French, so the money issued by the banks in that area were issued bilingually using english and French. The ten dollar bill, which was issued in bilingual situations had the ten dollars and "Dix Piaster" [75:55] was the french word taken from an Italian; taken from the levant and the word "Dix" is the word ten in french. It is the only thing we can assume is the word "Dixie" was expression for what they called the ten dollar bill like you call They have all kinds of names for every kind of bill.

WOMAN: Fascinating.

SPEAKER: We're showing these pieces of money that are bilingual and we'll show the music, Dixieland music and the use of the word "Dixie" as an expression arising from money and is still used because of its musical association.

WOMAN: That's fascinating. One of the things that interested money is something you said about money being issued in Sweden at some point in the past. I'm just personally curious about that. Did you say that the first paper money was issued in Sweden?

SPEAKER: Yes.

WOMAN: How did that happen?

SPEAKER: Nobody trusted anybody; they issued paper money. Do you want me to put it down there?

WOMAN: Yes.

SPEAKER: All right. We'll add to that little bit.

WOMAN: I'm just curious personally, but I'm going to write it down anyway.

SPEAKER: The money ordinarily from the beginning was specie content. In other words it had the amount of gold or the amount of silver in it constituting its value. So, the value passed in the form of the money. The idea of a piece of paper money instead of that was considered in China. It's not clear, but let's say at least 600 A.D., and by the time of the Ming Dynasty in 1300, the ruler of China and probably his predecessors had done some the same, by that time block printing was developed so that you could take wood and carve and insignia or in decoration or text or something in to that wood and then ink it and print a piece of paper. In other words, paper before that, papyrus was known but that was always difficult to write on and skins were obviously very difficult to write on and when paper-making had developed and then the ability to make a wood ornament and then the genius's in China said "we've got it", now instead of money, we will print with a block of carved wood and print on a piece of paper now and have an obligation. So, naturally the ruler of China thought this was my perfect way of spending money and making the people take it and all that he provided on the paper money that your head would be chopped off if you didn't accept it. So, that was ...

WOMAN: So, that was the beginning.

SPEAKER: So, that was the beginning of encouraging people to take paper money. By 1300 when Marco Polo came back from his visit to China, he reported it; the fact that they had paper money and were using it and of course, he reported a few other fancy tales that are unbelievable, but a lot of things he brought back were spaghetti, which was Chinese noodles and a lot of other wonderful ideas of what was going on. Well, Europe completely rejected, just think... they completely rejected using paper money knowing it was being used elsewhere and rejected it for well, practically 400... 350 years. Just think of the length of time not adapting an idea on that nature, because nobody trusted the issuer to pay it. Then, Stockholm Banci was a private banking organization in Let's see... I'm trying to figure out when there was... where the gentleman was... I'll have to look that up where the gentleman came from that came to Sweden and he put out paper money in the 1650-1660, which was private paper money and this was excepted and used and the reason it was accepted in Sweden particularly is because Sweden had very little silver and gold and enormous quantities of copper and they were making copper in to money but they had to have a big heavy clump to give you a good value so some of their copper pieces are....

WOMAN: Are huge.

SPEAKER: Huh?

WOMAN: Are huge.

SPEAKER: Oh yeah, they come two-feet long and a foot wide, and that would be the eight skelling and then there's the four skilling[83:00], two skilling and one-half and those were all stamped with the Crown's insignia and they were so heavy you couldn't carry them and shipping them around to pay money was so difficult and cumbersome that they were ready to start using paper money and then all of the sudden, after that happened they still said we don't trust anyone with paper money, but when the American colonies were starved by England, England would never ship the money and was always sucking money out of anything they could get; would have to go back to England under the laws of England, and the colonies had no money. The American colonies began in Massachusetts and began to issue paper money payable out of tax receipts. They would issue paper money that would last for ten years and or five or some other length of time and then legislate a tax which was run for 10 years and the money from that tax would pay off the paper money. They could not use that money for anything else but paying it off. In that way, the paper money got paid off by the people by paying taxes. That was the start. Everyone in the colonies thought that was a great idea and they all started issuing paper money. We will show probably a selection of American colonial paper money from each of the colonies from their basic beginnings until the Revolutionary War.

WOMAN: It's always fascinating....

SPEAKER: Humm?

WOMAN: It's always fascinating how it all developed.

SPEAKER: Oh sure. It just develops naturally. Because everything... you're dealing with rigid governments and rigid people, as well as, the people who want to live and enjoy life. It's a balance. The people who want to get a head and have a substance that they can hold; with real estate you can't move to another area and take it with you. With money you can. That is the difference.

WOMAN: Fascinating.

SPEAKER: Now shipping money was always, as I indicated previously, a very serious problem because the money not in the 18th century and 17th century ... 17th and 18th century, the chances of the money getting to the person that it was to go to were usually 90-percent... maybe a little over, but not much. So, you had a 5-10 risk of loss and that was by virtue of shipwreck, war, mutiny, hurricane, captain stealing it, and pirates stealing it and so on. These were the risks of shipping money around. We dig up Greek vessels from 1000 B.C. and there the shipment is still in the [87:44] and what have you. We dig up vessels with coins on them, hurricane, what have you. So, this is now a

wire transfer. We have all kinds of credit methods of transferring money and we have plastic cards so that those eliminate checks to some extent. The world changes but the hand to hand transfer of money has never stopped.

WOMAN: Let me... Let me ask you, you don't think.... You don't think with all this sort of and I realize that this is probably a conversation that a lot of people have that money is as we know it a tangible thing and will disappear eventually because of the lack...

SPEAKER: Well, that's the answer, but when you go to a market to buy your vegetables or your food, you don't have time to hit a machine or carry around an item that you have to press buttons to put in the amount of the transaction and so forth and so on, and when you want to give somebody some money, you want to control a child or give them money for the movies or buy them something or whatever you do, it still is more convenient to have money. Naturally, all of these other transactions can be simplified to some extent, but the fraud that they are running in to with respect to transfers of money by plastic card or by electronics or what have you is the same is... it was shift from counterfeiting to fraud. Now if the fraud cost more than it should, then you have to give that up. Money has been tested for a long time and in spite of all the counterfeiting and stealing and all its other problems, it still is the most convenient. Of course, there will be a balance of some nature. I think money will stay with us in one form or another. In other words, money is very convenient to bribe politicians. It is not good to put that in an electronic system and make a record of it. So, money from the gambling set-ups; you use a substitute for money, the gamblers use casino chips and use now plastic and what have you, but there is still an awful lot of cash that goes around. Cash is as you know the Chinese coin, the small Chinese bronze coin. It has been that way for a couple of about two thousand, two hundred years. That is the Chinese word that is used throughout the world.

WOMAN: That is fascinating. I didn't know that.

SPEAKER: Well, most people don't have any idea.

WOMAN: That's like.... That's fascinating.

SPEAKER: Well, so one cash is a little bronze Chinese coin with a square hole in it.

WOMAN: Wow. With a little square? I mean, I know what it looks like when you say that because I've seen images of it, but I had no idea that is what it was.

SPEAKER: Yeah, and the square hole is we ought to.... the square hole is so that you can put a wooden peg through a whole group of Chinese coins at one time because they were all cast bronze and you put that on so that you can turn a whole group of them in one and file the casting defects off of them and make them circular. You turn all the coins together on a square center piece and make them all round on the outside because the round coin is much more convenient to handle than any other shape.

WOMAN: And then it comes in handy because you can also attach them to your.... whatever purse or whatever you have once you are using them, right?

SPEAKER: Yeah, you don't have to have them lose. I have a collection of purses so that you can see them all the way from leather pouches that they wore on their belt and women wore coins or ornaments or containers between their busts and that was safety money or whatever when they'd go out and they'd get stuff...

WOMAN: [93:36] Before the cell phone era.

[Laughing]

SPEAKER: That's right. Money has made use of all kinds of operating device that you put money in and they make something operate. At MIT when I was at college, one of the stunts of the students was to take a pay telephone off the wall and put a swivel in the back of the telephone so that when you made a phone call and were talking you turn the thing upside down and you got your money back at the end of the call.

WOMAN: That wasn't you, was it Eric?

SPEAKER: No, it wasn't. I did other things that were terrible.

[Laughing]

SPEAKER: [94:44] used to have restaurants that all of the food was in a little compartment. When it was hot you put it in from the back and there was a wall, a solid wall of glass...

WOMAN: What did they call those places?

SPEAKER: [95:04]

WOMAN: No, but I mean....

SPEAKER: Automat.

WOMAN: Automat.

SPEAKER: Sure, automat. So, you put in your money and it opened up and you got a fried egg or a serving of cheese or pie or whatever you wanted and the money was very convenient for that.

WOMAN: That is really sort of an amazing concept when you, you know... it is one thing today when you can get things out of a machine because there are microwaves and that kind of thing, but to actually this food then, fresh food and there were people on the other side...

SPEAKER: Of course. In other words, money has so many different uses. We have collections of money handling machines. We have change makers so that you press a button and it will give you the change at grocery stores, theater or candy store or what have you. We have money counters that count the coins for you and we have money separators that are a sorter that separates one denomination from the other. We have counterfeiting devices that you put the money in and it tells you whether it is good or bad. These are all things directly related to the use or handling of the money.

Is this enough for one session?

WOMAN: This is fine.

SPEAKER: Well, it will give you some idea...

WOMAN: Yeah. What time is it Eric?

SPEAKER: a quarter to three.

WOMAN: Yeah, this is fine. I am happy to do it for you for as long or as short as you... this is sort of a set thing, but anything else is how it works for you. I am really fascinated by this so I'll be here for a while.

SPEAKER: Shall we talk about Ben Franklin? Because this is...

WOMAN: Yeah. I remember Ben from the last museum.

SPEAKER: Which museum?

WOMAN: From the one downtown.

SPEAKER: Well, Ben Franklin is in my mind, the greatest mind of America. He is so amazing the mind that this man has and his ability to understand practically every subject is so vast that it's frightening. Here is a man with virtually no education, who did everything. Now when I say everything, He started as an apprentice with his brother in printing. He became an expert printer at perhaps 14 or 15. He began to write letters to his brother's newspaper secretly on behalf of women and then he would answer them from the newspapers point of view. He realized he knew so much more and was confined by the printing business there that he left for Philadelphia. Now the story is that when he got to Philadelphia, he went and asked for a [99:29] loaf to a bakery and [99:29] loaf they didn't have that pre-pence of colonial money was not the way that bread was sold in Philadelphia it would be a penny loaf there. He had three penny loafs, one under each arm and was chewing on the third because he bought more bread than he should have. So, there the penny loaf shows the control for the poor people that a penny had to buy a specific amount of bread and couldn't charge more for bread than a penny for a certain weight of bread. Here he starts with a money situation the minute he gets to

Philadelphia. Then his career to me.... He went to England to learn more about printing and ended up knowing more about printing than most people in England. And then his life comes back to Philadelphia. He made a fortune in the newspaper business arising out of his printing. Now he buys real estate and he becomes the richest self-made man in America and doesn't even care about the money for its own sake, and then starts scientific investigations and of course, learned what electricity was. He learned all kinds... all kinds of reading of anything written in English and he wasn't trained in any foreign languages particularly but picked them up and then after he understood ... or tried to understand why oil floats on water... why you put oil on the water is to calm the waters down. He reorganized the postal system for the British in America. He develops bifocals. He develops and improves the stove. He develops the lightening rod from his electric experiments. He becomes the crazy scientist from America that everybody in the earth wants to see because he's a head of everybody in his thinking. And then having established all of this... and I'm building an enormous library, I have to add that too. After having all of this, he just dismisses all of this for his life and says I want to develop things for the public. He develops, of course, hospitals, philosophical societies, and libraries and education in general. And then says I've got to straighten out America in politics and I'm going to England to try and get them to let America develop on its own. He goes to England and pleads and begs to let them handle America more gently and treat us as people who want to run our own affairs and not dictate to everything that we have to do and control it to their benefit. He devotes the rest of his life to try and straighten out the problems between England and America as a politician. He learns to make everybody compromise. To have a man and be able to go anywhere in Europe and be respected in high society, intellectual society and political society is just nothing short of amazing. And then finally he gave up; it's hopeless. England is just too stubborn to do the right thing and then he becomes the vigorous independence promoter even though his son was still alive in England, he even broke with his son. All of the women loved him and he loved them and all the attention they gave him. No human being has ever been like this.

WOMAN: Do we know anything about his parents? I mean...

SPEAKER: They were just ordinary. He's just one of... his father was a candle maker and ...

WOMAN: Just ordinary people.

SPEAKER: This is just a man of explosion that was thinking at all times about any subject that could occur to him. To self-educate that is a mystery that a guy could do that. Of course, all of the scientist of England, when he developed the idea of what electricity was and then of course, I forgot his music... he developed the harmonica, the water wheel, he improved it so that you could crank it and put your wet fingers on the glass and play music. I mean, it's just a miracle to

WOMAN: It would be fun to have dinner with him wouldn't it.

SPEAKER: Well, it's just a complete freak of the human mind to see something of that come out of no where. And whatever selection of the

WOMAN: It's a fluke.

SPEAKER: It is just an amazing fluke.

WOMAN: Do you think there... does anybody else in history that sort of compares to him, do you think or no?

SPEAKER: It is hard to find one. Well, some of the religious leaders... they were all.... I don't know.... You don't know what an education

WOMAN: I was going to say, they were all schooled....

SPEAKER: Buddha or Muhammad, those fellows had education.

WOMAN: You want it off? Yeah, let me pause it.

SPEAKER: Problem?

WOMAN: Nope. We are recording. I hit the wrong button and I was just trying to get back to it. You were talking about...

SPEAKER: One of Ben Franklin's major items relating to money was his relationship with a fellow by the name of **Brighton**, who was a Philadelphia resident and was a botanist and was spreading information about plants though out the students in America and would send them to Europe also. He did this by making impressions of leaves in a book in the way that Leonardo da Vinci had taken impressions, that would be to put ink on both sides of a leaf and would close a book on that leaf or leaves and get the transfer of the high points of the leaf on both sides of the on the open book pages. **Brighton** showed him exactly how that was done and Franklin was trying to think about the matter and figured out if he could print that way he would have an anatomic printing device because nobody could copy a leaf because every leaf is different like a finger print; even the same leaves on a different tree have different shaping around their edges and things and so forth. The idea came to him because of a printing problem with stereotyping. Stereotyping meant that you could take lead type and when you had them framed up in the block for printing it would be nice to be able to make a transfer, the whole block on to a negative plaster and then fill that negative with lead again and now you have a stereotype of the page and release all of the type of the original block to be used over again. Well, of course nobody had been able to accomplish that until William Ged had done it in England in 1739.

Franklin knew all about the business of transfer to make a stereotype. He decided, well, if he could take a leaf and press that leaf into something and take the impression of that

leaf, he could get a negative of that leaf and then be able to make some type of a transfer to that. He was able to do that and kept it a secret. The Philadelphia art museum one day wrote me and said since I had studied paper money so long and Franklin had leaves on paper money, did I know how he did it. The answer was very simple, I said I sure don't know, but I'll try to find out. Well, of course, I began a series of experiments and my sister joined me to see if we could transfer a leaf to a printing block. We figured out that he was using wet paper mashay and pressing it down and pressing the leaf on the paper mashay and letting it dry and then the leaf would be held in place and dried and hard supported behind everywhere and then he would pour plaster over that and get a negative and now if he could pour led on the plaster, he would get an image of a leaf that he could print from. That sounds very simple, except that the plaster breaks every time you pour hot led on it. So, only Franklin would figure out why is the plaster breaking? He learned that one of the reasons it was breaking was because it had moisture in it. He squeezed the moisture out of the plaster to be sure that could be. Then he found out that there was expansion when you heated up plaster. He decided we need something that won't expand so he put brick dust in the plaster and the brick dust doesn't expand so that would help stop the breakage. Then he also knew that if he had a material that didn't expand or contract that would be even better, so he ground up mica and put mica into the plaster so that he had a mixture of brick dust, mica and plaster. Finally, learned that if you did that the plaster would not break and you could make a mold. This was his scientific method of making an image of a leaf and nobody could top him.

I wrote this up many years ago and showed how he kept it all a secret except for a couple of other printers in the country. He concealed the matter so well that it wasn't reinvented for a hundred years after that.

WOMAN: Did he use it for anything else? I'm just curious. He invented this whole thing for the leaf impression, but did he use that material for anything else?

SPEAKER: He had no other reason to do it. He could develop anything. So...

WOMAN: To get to where he wanted to go, right?

SPEAKER: Yes, and he would make type. One of these tiny things he did on the Pennsylvania paper money was he would write seventy dollars or forty dollars and so forth in the printing ink; whatever denomination he was working on, and then he would write in the same serious a ten dollar or five pound, excuse me eliminate the dollar, five pounds, ten shillings, twenty shillings, whatever the denomination was, he didn't want people to be able to change the denomination so to raise the ten dollar to a fifty dollar, ten pound or fifty pound, ten shilling or fifty shilling, he wanted to eliminate that. He would write it on the ten shilling in one form of type and fifty shilling on another form of type so he would have seven or eight different kinds of type fonts so that each denomination would have separate type fonts in certain parts of it. Some he would even put in caps or lower case letters, from right to left italics or everything imaginable. He became master anti-counterfeiter, anti-alteration for the money that he printed. There was nothing that he couldn't... no cast that couldn't try to improve. And of course, he improved the

printing press tremendously because its money printing had to be better than anyone else. Then he printed money in two colors and in that way made it much more complicated for counterfeiting. To this day, I don't know how he printed some of his red and black colors. It seems impossible. He was an expert in marble printing; putting marble on paper, putting floating oil on a liquid surface and making designs in the floating oil and he had paper of that sort and made some of it in England and used that for paper money and that made it even more complicated for counterfeiting.

WOMAN: So that goes back into the whole thing when he discovered oil and water?

SPEAKER: Yeah, but that was for a different thing.

WOMAN: He used everything.

SPEAKER: Every...

WOMAN: Fascinating.

SPEAKER: Every elemental, physical, chemical situation that he observed, he would see all of its uses and applications.

WOMAN: It all fit. Wow.

SPEAKER: Always thinking on improvements on whatever people were doing. I was so glad when he printed all the various money of colonial America and had designs for the legend and the mottos for the coins and the paper money. His motto was "*A penny saved is a penny earned*". I mean, these are just ingenious. An whether or not he thought it up or just found it somewhere, he created the greatest line of all times that he put on a piece of paper money, that should be put on a piece of paper money, and that is "*It is against my principal to pay any interest and against my interest to pay the principal*".

WOMAN: That's pretty good.

SPEAKER: Huh?

WOMAN: That's pretty good.

SPEAKER: "*It is against my principal to pay any interest and against my interest to pay the principal*".

WOMAN: It is isn't it?

SPEAKER: Then his ability to deal with politicians and all their [12:05] and they all seem to respect his judgment because he would find a way to compromise any situation and get it over with.

WOMAN: Is should have... it's fascinating that somebody would have that type of intellectual power would sort of put up with a lot of things that he did. He was like thee perfect guy, right?

SPEAKER: Sure enough. Perfect. Of course, he wasn't perfect. And oh, another amazing thing about him is he tolerated all religion and knew all about each religious religion and paid a very modest attention to all the different creeds and so forth and they never got in his way. He had a deal with all these people with heavy devotion to their religious beliefs.

WOMAN: I think we need him now.

SPEAKER: Huh?

WOMAN: I think we need him now.

SPEAKER: Yeah.. very, very much

WOMAN: I guess tolerance is exactly the thing that I find so amazing about him.

SPEAKER: Yeah. That's it. It's so interesting to have no... having earned enough money from his printing and newspaper business, he never cared about lightening rods or getting money from designing or making those when they spread throughout the world.

WOMAN: Just sort of like a gift?

SPEAKER: All of his functions after he had enough money were no-money functions.

WOMAN: He was just sort of a conceptual philanthropist.

SPEAKER: He was certainly, certainly that. And as well, he gave the Franklin...?

WOMAN: The stove?

SPEAKER: No, that's an invention, the Franklin stove and I mentioned it.

WOMAN: Was that ever patented or anything?

SPEAKER: No, of course not. There was no patent then, but he developed the stove that would give more heat to the rope by very, very simple construction. And I mean all of these inventions were... Well, what I was going to talk about was the Franklin prize was a student prize in Boston is still being given. He left some money so that the best students in Boston would get a Franklin [15:25] and that still goes on.

WOMAN: That's amazing.

SPEAKER: It still goes on after a hundred and some odd years... two hundred and some odd years.

WOMAN: We don't have another Franklin yet though?